

Service Manual

ROBOT 185, 1105

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Introduction

This publication is designed for the benefit of JCB Distributor Service Engineers who are receiving, or have received, training by JCB Technical Training Department.

These personnel should have a sound knowledge of workshop practice, safety procedures, and general techniques associated with the maintenance and repair of hydraulic earthmoving equipment.

Renewal of oil seals, gaskets, etc., and any component showing obvious signs of wear or damage is expected as a matter of course. It is expected that components will be cleaned and lubricated where appropriate, and that any opened hose or pipe connections will be blanked to prevent excessive loss of hydraulic fluid and ingress of dirt. Finally, please remember above all else **SAFETY MUST COME FIRST!**

The manual is compiled in sections, the first three are numbered and contain information as follows:

- 1** = **General Information** - includes torque settings and service tools.
- 2** = **Care & Safety** - includes warnings and cautions pertinent to aspects of workshop procedures etc.
- 3** = **Routine Maintenance** - includes service schedules and recommended lubricants for all the machine.

The remaining sections are alphabetically coded and deal with Dismantling, Overhaul etc. of specific components, for example:

- A** = **Attachments**
- B** = **Body & Framework** ...etc.

The page numbering in each alphabetically coded section is not continuous. This allows for the insertion of new items in later issues of the manual.

Section contents, technical data, circuit descriptions, operation descriptions, etc. are inserted at the beginning of each alphabetically coded section.

All sections are listed on the front cover; tabbed divider cards align directly with individual sections on the front cover for rapid reference.

Where a torque setting is given as a single figure it may be varied by plus or minus 3%. Torque figures indicated are for dry threads, hence for lubricated threads may be reduced by one third.

'Left Hand' and 'Right Hand' are as viewed from the rear of the machine facing forwards.

Colour Coding

The following colour coding, used on illustrations to denote various conditions of oil pressure and flow, is standardised throughout JCB Service Publications.



Blue: Neutral Circuit Pressure.



Light Green: Oil subjected to a partial vacuum due to a drop in pressure (cavitation).



Red: Pressure generated by the operation of a service. Depending on application this may be anything between Neutral Circuit Pressure and M.R.V. Operating Pressure.



Yellow: Oil trapped within a chamber or line, preventing movement of components (lock-up).



Pink: Pressure that is above Neutral Circuit Pressure but lower than that denoted by Red.



Orange: Oil pressure used in a controlling device (servo).



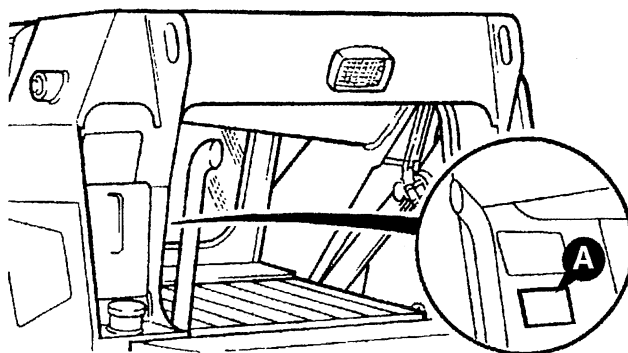
Green: Exhaust

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The serial number of the chassis, engine, lift arm and hydraulic pump unit positively identify the type of JCB Skid Steer Loader you have.

Machine Identification Plate

The machine identification plate **A** is located as shown. It is stamped with the serial numbers of the major individual units.



S222930

Typical Vehicle Identification Number (VIN)

SLP 185 S B V E 746001
 ① ② ③ ④ ⑤ ⑥ ⑦

- ① World Manufacturer Identification
- ② Machine Model
- ③ Machine Type (S = Standard, H = High-flow)
- ④ Build Type (A = Canopy, B = Cab)
- ⑤ Year of Manufacture:
 T = 1996 1 = 2001
 V = 1997 2 = 2002
 W = 1998 3 = 2003
 X = 1999 4 = 2004
 Y = 2000 5 = 2005
- ⑥ Manufacturer Location (E = England)
- ⑦ Product Identification Number (PIN)

<div style="display: inline-block; border: 1px solid black; padding: 2px; text-align: center;"> J.C.BAMFORD EXCAVATORS LTD. ROCESTER, STAFFS, ENGLAND. </div>		<small>EV 99001</small> <small>19821014</small>																							
CONSTRUCTOR		MADE IN UK																							
Vehicle Identification No.		Product Identification No.																							
ENGINE SERIAL No.		WEIGHT																							
PUMP SERIAL No.		YEAR OF MANUFACTURE																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%;">MODEL</th> <th colspan="2" style="text-align: center;">80/1269/BEC</th> </tr> <tr> <td> </td> <td style="width: 33%;">POWER KW</td> <td style="width: 33%;">R.P.M.</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	MODEL	80/1269/BEC			POWER KW	R.P.M.							<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%;">MODEL</th> <th colspan="2" style="text-align: center;">80/1269/BEC</th> </tr> <tr> <td> </td> <td style="width: 33%;">POWER KW</td> <td style="width: 33%;">R.P.M.</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	MODEL	80/1269/BEC			POWER KW	R.P.M.						
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	POWER KW	R.P.M.																							
MODEL	80/1269/BEC																								
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817/0437

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Unit Identification

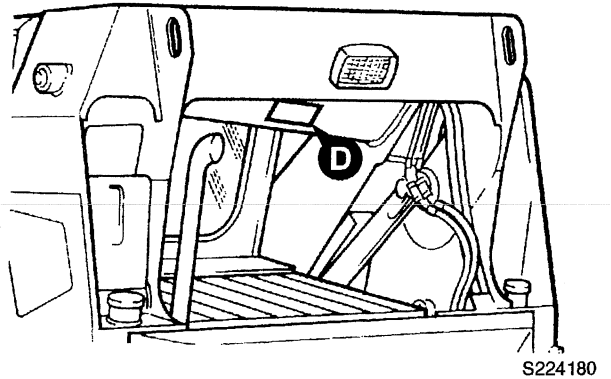
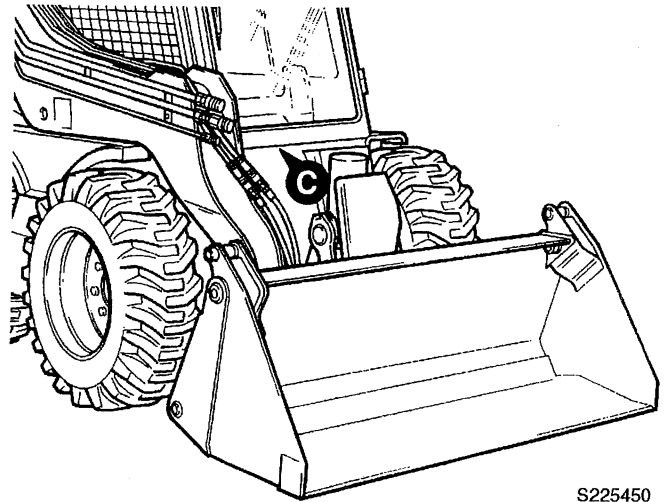
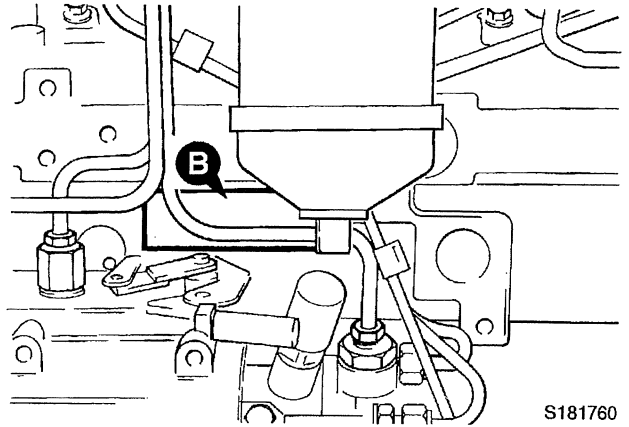
The engine serial number is stamped on a label **B** on the side of the cylinder block.

The chassis serial number is stamped on the front face of the chassis underneath the windscreen as shown at **C**.

The lift arm serial number is stamped on the rear of the lift arm as shown at **D**.

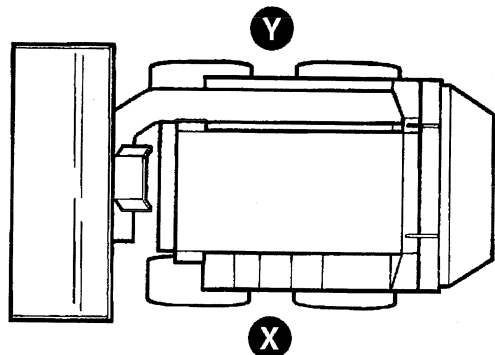
The hydraulic pump unit serial number is stamped underneath the pump towards the drive end.

If any of the above units are replaced with new ones, the relevant serial number on the Machine Identification Plate will be superseded. Either stamp the plate with the new number or stamp out the old number.



Left Side, Right Side

In this manual, 'left' **X** and 'right' **Y** mean your left and right when you are seated correctly in the machine.



Use only where no torque setting is specified in the text. Values are for dry threads and may be within three per cent of the figures stated. For lubricated threads the values should be REDUCED by one third.

UNF Grade 'S' Bolts

Bolt Size in	(mm)	Hexagon (A/F) in	Nm	Torque Settings	
				kgf m	lbf ft
1/4	(6.3)	7/16	14	1.4	10
5/16	(7.9)	1/2	28	2.8	20
3/8	(9.5)	9/16	49	5.0	36
7/16	(11.1)	5/8	78	8.0	58
1/2	(12.7)	3/4	117	12.0	87
9/16	(14.3)	13/16	170	17.3	125
5/8	(15.9)	15/16	238	24.3	175
3/4	(19.0)	1 1/8	407	41.5	300
7/8	(22.2)	1 5/16	650	66.3	480
1	(25.4)	1 1/2	970	99.0	715
1 1/4	(31.7)	1 7/8	1940	198.0	1430
1 1/2	(38.1)	2 1/4	3390	345.0	2500

Metric Grade 8.8 Bolts

Bolt Size in	(mm)	Hexagon (A/F) in	Nm	Torque Settings	
				kgf m	lbf ft
M5	(5)	8	7	0.7	5
M6	(6)	10	12	1.2	9
M8	(8)	13	28	3.0	21
M10	(10)	17	56	5.7	42
M12	(12)	19	98	10	72
M16	(16)	24	244	25	180
M20	(20)	30	476	48	352
M24	(24)	36	822	84	607
M30	(30)	46	1633	166	1205
M36	(36)	55	2854	291	2105

Note: All bolts used on JCB machines are high tensile and must not be replaced by bolts of a lesser tensile specification.

Section C - Electrics

AVO Test Kit

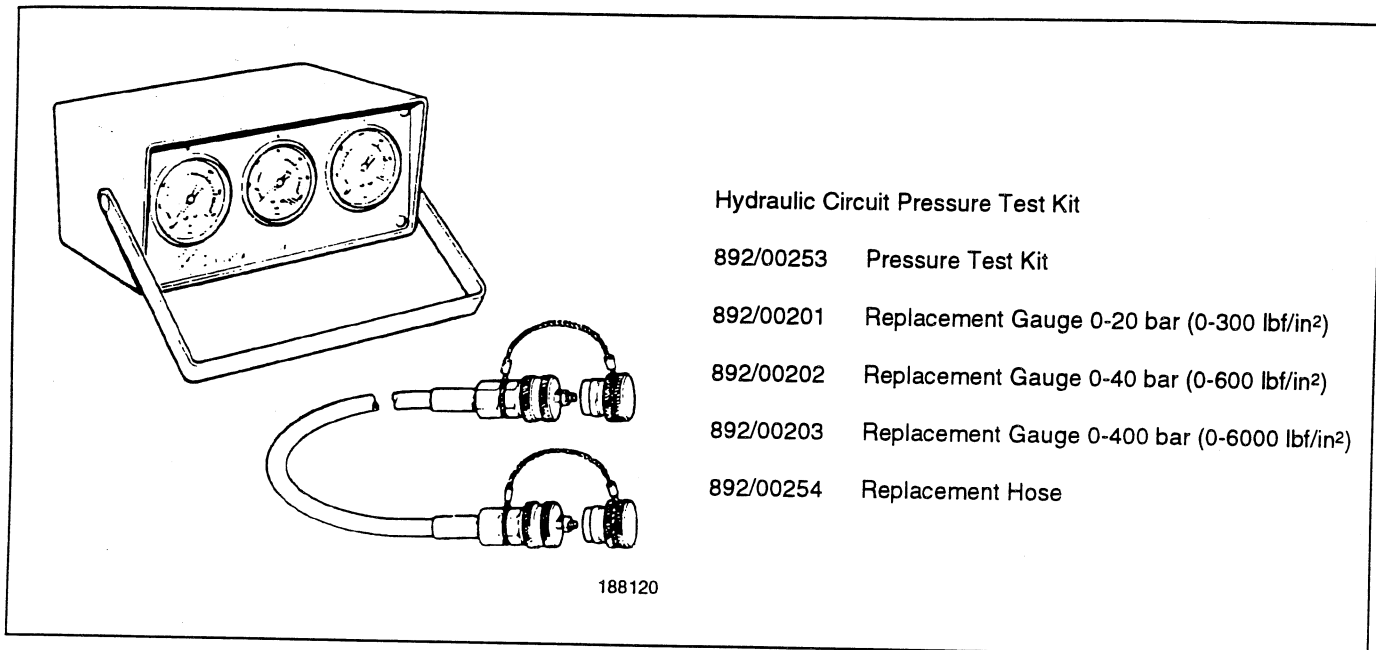
1	892/00283	Tool Kit Case
2	892/00281	AVO Meter
3	892/00286	Surface Temperature Probe
4	892/00284	Microtach Digital Tachometer
5	892/00282	Shunt - open type
6	892/00285	Hydraulic Oil Temperature Probe

188230

* 993/85700 Battery Tester

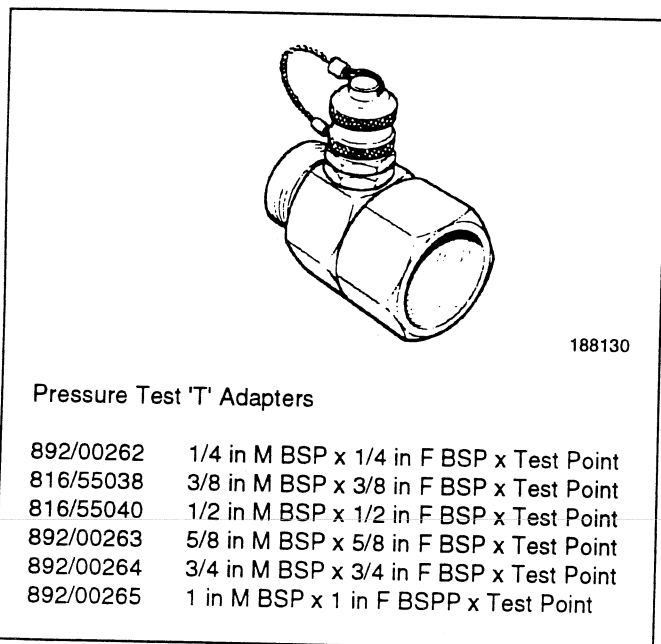
239510

Section E - Hydraulics



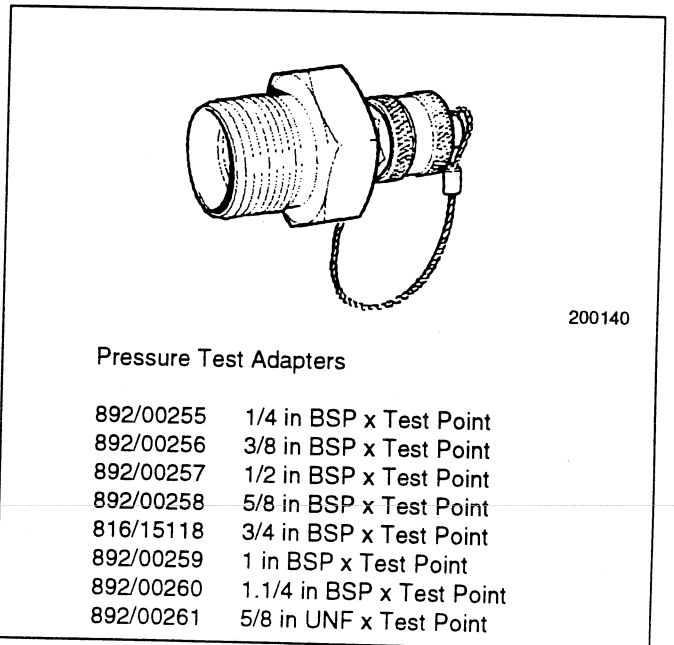
Hydraulic Circuit Pressure Test Kit

- 892/00253 Pressure Test Kit
- 892/00201 Replacement Gauge 0-20 bar (0-300 lbf/in²)
- 892/00202 Replacement Gauge 0-40 bar (0-600 lbf/in²)
- 892/00203 Replacement Gauge 0-400 bar (0-6000 lbf/in²)
- 892/00254 Replacement Hose



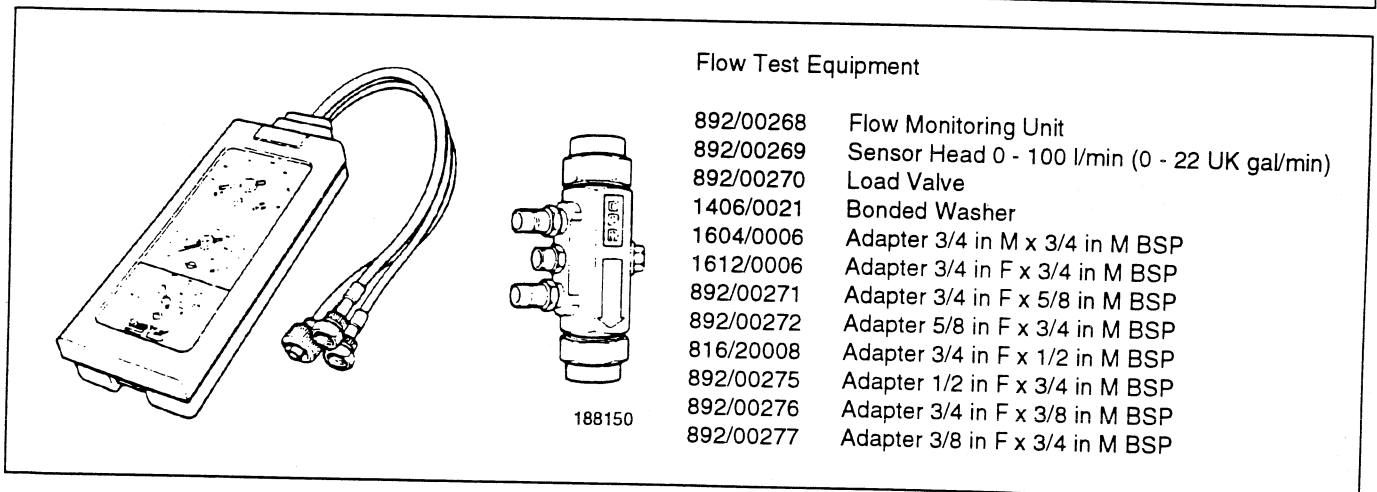
Pressure Test 'T' Adapters

- 892/00262 1/4 in M BSP x 1/4 in F BSP x Test Point
- 816/55038 3/8 in M BSP x 3/8 in F BSP x Test Point
- 816/55040 1/2 in M BSP x 1/2 in F BSP x Test Point
- 892/00263 5/8 in M BSP x 5/8 in F BSP x Test Point
- 892/00264 3/4 in M BSP x 3/4 in F BSP x Test Point
- 892/00265 1 in M BSP x 1 in F BSPP x Test Point



Pressure Test Adapters

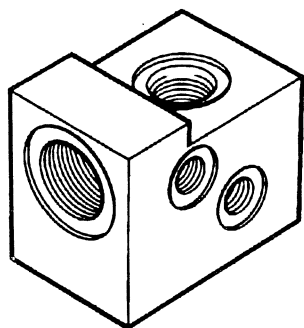
- 892/00255 1/4 in BSP x Test Point
- 892/00256 3/8 in BSP x Test Point
- 892/00257 1/2 in BSP x Test Point
- 892/00258 5/8 in BSP x Test Point
- 816/15118 3/4 in BSP x Test Point
- 892/00259 1 in BSP x Test Point
- 892/00260 1.1/4 in BSP x Test Point
- 892/00261 5/8 in UNF x Test Point



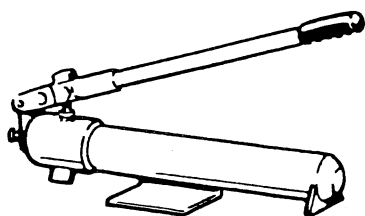
Flow Test Equipment

- 892/00268 Flow Monitoring Unit
- 892/00269 Sensor Head 0 - 100 l/min (0 - 22 UK gal/min)
- 892/00270 Load Valve
- 1406/0021 Bonded Washer
- 1604/0006 Adapter 3/4 in M x 3/4 in M BSP
- 1612/0006 Adapter 3/4 in F x 3/4 in M BSP
- 892/00271 Adapter 3/4 in F x 5/8 in M BSP
- 892/00272 Adapter 5/8 in F x 3/4 in M BSP
- 816/20008 Adapter 3/4 in F x 1/2 in M BSP
- 892/00275 Adapter 1/2 in F x 3/4 in M BSP
- 892/00276 Adapter 3/4 in F x 3/8 in M BSP
- 892/00277 Adapter 3/8 in F x 3/4 in M BSP

Section E - Hydraulics



* 892/00252 Test Block for A. R. V.



193850

Hand Pump Equipment

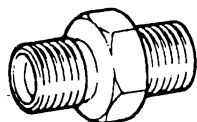
- 892/00223 Hand Pump
- 892/00137 Micro-bore Hose 1/4 in BSP x 5 metres
- 892/00274 Adapter 1/4 in M BSP x 3/8 in M BSP Taper
- 892/00262 1/4 in M BSP x 1/4 in F BSP x Test Point
- 892/00706 Test Probe
- 892/00278 Gauge 0 - 40 bar (0 - 600 lbf/in²)
- 892/00279 Gauge 0 - 400 bar (0 - 6000 lbf/in²)



188140

Bonded Washers

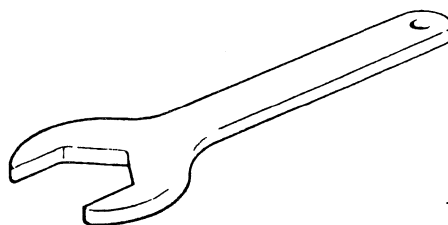
- 1406/0011 1/4 in BSP
- 1406/0018 1/2 in BSP
- 1406/0021 3/4 in BSP
- 1406/0029 1.1/4 in BSP



193860

Male Adapters - BSP x BSP

- 1606/0003 3/8 in x 1/4 in
- 1604/0003 3/8 in x 3/8 in
- 1606/0004 1/2 in x 1/4 in
- 1606/0007 1/2 in x 3/8 in
- 1604/0004 1/2 in x 1/2 in
- 1606/0008 3/4 in x 3/8 in
- 1606/0009 3/4 in x 1/2 in
- 1604/0006 3/4 in x 3/4 in

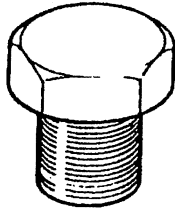


193930

Hexagon Spanners for Ram Pistons and End Caps

- 992/09300 55 mm A/F
- 992/09400 65 mm A/F
- 992/09500 75 mm A/F
- 992/09600 85 mm A/F

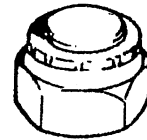
Section E - Hydraulics



193870

Female Cone Blanking Plug

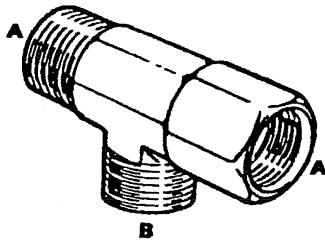
- 892/00055 1/4 in BSP
- 892/00056 3/8 in BSP
- 892/00057 1/2 in BSP
- 892/00059 3/4 in BSP
- 892/00060 1 in BSP'T'



193880

Male Cone Blanking Plug

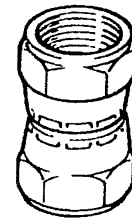
- 816/00294 1/4 in BSP
- 816/00189 3/8 in BSP
- 816/00190 1/2 in BSP
- 816/00197 5/8 in BSP
- 816/00196 3/4 in BSP
- 816/00193 1 in BSP



193890

'T' Adapters

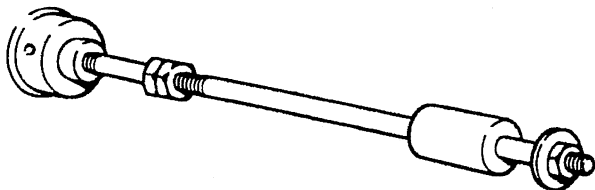
- 892/00047 3/8 in BSP (A) x 1/4 in BSP (B)
- 892/00048 1/2 in BSP (A) x 1/4 in BSP (B)
- 816/50043 3/4 in BSP (A) x 1/4 in BSP (B)
- 816/60096 3/4 in BSP (A) x 3/4 in BSP (B)



193900

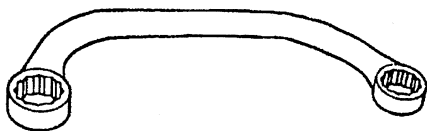
Female Connectors

- 892/00074 3/8 in BSP x 3/8 in BSP
- 892/00075 1/2 in BSP x 1/2 in BSP
- 892/00077 3/4 in BSP x 3/4 in BSP



193910

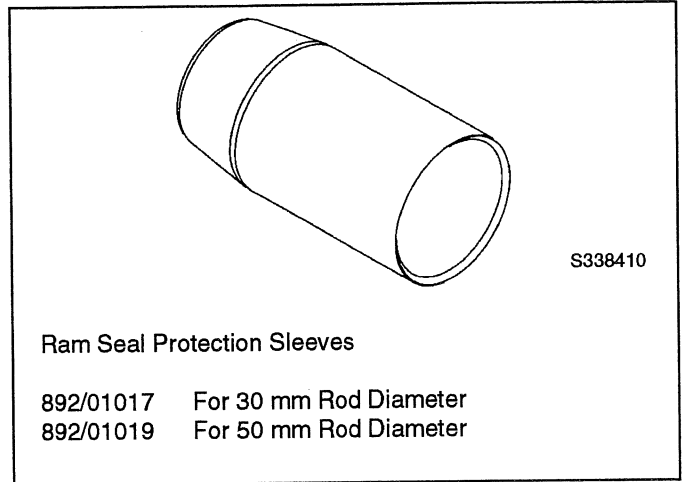
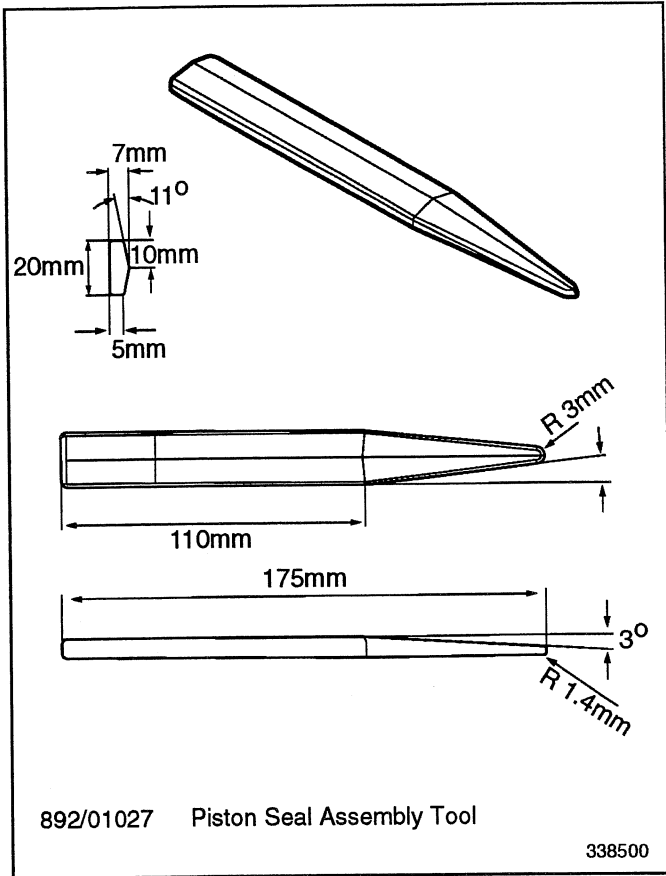
993/68100 Slide Hammer



193920

993/99510 Half Moon Spanner

Section E - Hydraulics



JCB Multigasket	A medium strength sealant suitable for all sizes of gasket flanges, and for hydraulic fittings of 25-65 mm diameter.	4102/1212	50ml
JCB Threadlocker	A locking fluid for use on threads larger than 50 mm dia.	4101/0451	50ml
JCB Threadlocker (High Strength)	A high strength locking fluid for use with threaded components. Gasketing for all sizes of flange where the strength of the joint is important.	4102/0551	50ml
JCB Retainer (High Strength)	For retaining parts which are unlikely to be dismantled.	4101/0651	50ml
JCB Threadlocker & Sealer	A medium strength locking fluid for sealing and retaining nuts, bolts, and screws up to 50 mm dia., and for hydraulic fittings up to 25 mm dia.	4101/0250 4101/0251	10ml 50ml
JCB Threadlocker & Sealer (High Strength)	A medium to high strength locking fluid for retention and sealing of ram piston heads.	4101/0550 4101/0552	10ml 50ml
JCB Threadseal	A medium strength thread sealing compound.	4102/1951	50ml
JCB Activator	A cleaning primer which speeds the curing rate of anaerobic products.	4104/0251 4104/0253	Aerosol (1 ltr) Bottle (200 ml)
JCB Cleaner/Degreaser	For degreasing components prior to use of anaerobic adhesives and sealants.	4104/1557	Aerosol (400 ml)

The part numbers and descriptions of sealing and retaining compounds available from JCB Service have been revised with effect from January 1997 (see MI 563/H, 507/HA, 511/E). The list above has been changed accordingly.

References to these products on subsequent pages in this service manual will be progressively updated but for convenience a cross reference table is shown below.

Old Description	Old Part Number	New Description	New Part Number
JCB High Strength Threadlocker	4102/0502	JCB Threadlocker (High Strength)	4102/0551
JCB High Strength Retainer	4101/0602	JCB Retainer (High Strength)	4101/0651
JCB Lock & Seal	4101/0202	JCB Threadlocker & Sealer	4101/0251
Loctite 243	4101/1101	Use 4101/0251	
Loctite 262	4101/0502	JCB Threadlocker & Sealer (High Strength)	4101/0552
Loctite 932	4101/0402	JCB Threadlocker	4101/0451
Loctite Activator N	4104/0101 Aerosol 4104/0102 Bottle	JCB Activator	4104/0251 4104/0253
JCB Cleaner & Degreaser	4104/1538 Aerosol	JCB Cleaner/Degreaser	4104/1557

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**Thank you very much
for your reading.**

**Please click here and go
back to the website.**

**Then, you can
download the complete
manual instantly.**

No waiting.

Safety Notices

In this publication and on the machine there are safety notices. Each notice starts with a signal word. The signal word meanings are given below.

DANGER

Denotes an extreme hazard exists. If proper precautions are not taken, it is highly probable that the operator (or others) could be killed or seriously injured.

INT-1-2-1

WARNING

Denotes a hazard exists. If proper precautions are not taken, the operator (or others) could be killed or seriously injured.

INT-1-2-2

CAUTION

Denotes a reminder of safety practices. Failure to follow these safety practices could result in injury to the operator (or others) and possible damage to the machine.

INT-1-2-3

All construction and agricultural equipment can be hazardous. When a JCB machine is correctly operated and properly maintained, it is a safe machine to work with. But when it is carelessly operated or poorly maintained it can become a danger to you (the operator) and others.

Do not work with the machine until you are sure that you can control it.

Do not start any job until you are sure that you and those around you will be safe.

If you are unsure of anything, about the machine or the job, ask someone who knows. Do not assume anything.

Remember
BE CAREFUL
BE ALERT
BE SAFE

GEN-1-6

General Safety

WARNING

Decals

You can be injured if you do not obey the decal safety instructions. Keep decals clean. Replace unreadable or missing decals with new ones before operating the machine. Make sure replacement parts include warning decals where necessary.

INT-1-3-4

WARNING

Care and Alertness

All the time you are working with or on the machine, take care and stay alert. Always be careful. Always be alert for hazards.

INT-1-3-5

WARNING

Clothing

You can be injured if you do not wear the proper clothing. Loose clothing can get caught in the machinery. Wear protective clothing to suit the job. Examples of protective clothing are: a hard hat, safety shoes, safety glasses, a well fitting overall, ear-protectors and industrial gloves. Keep cuffs fastened. Do not wear a necktie or scarf. Keep long hair restrained.

INT-1-3-6

WARNING

Lifting Equipment

You can be injured if you use faulty lifting equipment. Make sure that lifting equipment is in good condition. Make sure that lifting tackle complies with all local regulations and is suitable for the job. Make sure that lifting equipment is strong enough for the job.

INT-1-3-7

WARNING

Raised Attachments

Raised attachments can fall and injure you. Do not walk or work under raised attachments unless they are safely blocked.

INT-1-3-8